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TRANSLATIONS ON EASTERN EUROPE
ECONOMIC AND INDUSTRIAL AFFAIRS
(FOUO 2/79)

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TRANSLATIONS ON EASTERN EUROPE

ECONOMIC AND INDUSTRIAL AFFAIRS

(FOUO 2/79)

CONTENTS PAGE

CZECHOSLOVAKIA

MACHINE INDUSTRY INVESTMENTS FOR SEVENTH FIVE-YEAR PLAN

Prague INVESTICNI VYSTAVBA in Czech No 10, 1978 pp 313-317

[Article by Eng Jiri Kral]

[Text] The resolution of the presidium of the CSSR government No. 176/1977 dated 25 August 1977 about the long-term program of reconstruction and modernization of the production base in the machine industry (further RaM) directs the ministers of metallurgy and heavy engineering (FMHTS) and of general engineering (FMVS) in cooperation with the deputy premier of the government and the chairman of the State Planning Commission:

--To process, identify and determine precisely the capital investment needs to insure implementation of the RaM program in the engineering production base in the Seventh and Eighth Five-Year Plan periods in coordination with the other parts of the plans and in accord with the results of studies made in the first stage of the RaM program;

--To build up gradually a uniform and organically linked system of technological design offices for the preparation of comprehensive innovation of engineering production processes and for advisory activity in rationalization to be completed by 1986 with a work force of 5,000.

The above institutions in cooperation with the FMTIR and FMZO (Federal Ministry of Foreign Trade) were instructed:

--To implement individual tasks for the Seventh and Eighth Five-Year Plan in the second stage of work on the long-term RaM program comprising the meeting of needs of capital construction and exports, solving the hitherto unresolved problems in the areas of capital investment, the work plan and the material supply of machinery expecially in complementary production sectors; to demonstrate economic viability by achieving savings in labor, reduction of material requirements, increasing the production of automated production processes, increasing the profitability of foreign trade and the competitiveness of engineering products.

Content and Concept of Reconstruction and Modernization (RaM)

The objective of the set of RaM actions in the engineering and production base is to render production more economical by transition from extensive to intensive development in the sphere of production, and reduce construction expenditures to a minimum principally by self-help and exclusion of building construction subcontractors.

RaM is a system of technical and organizational measures which, when implemented in a specific production unit, must prove their effectiveness by the achievement of favorable technical and economic results and increased labor productivity. The system is designed to resolve problems in manufactures and enterprises within a short time with a minimum of new building construction. In principle, the proportion of investment in machinery should constitute or exceed 70 to 80 percent of overall budgetary expenditures (RN). Excluded from the RaM program are investments intended for the extensive development of the production base, the construction of new enterprises and difficult construction projects generally, further investments for the simple replacement of physically wornout means of production, the construction of auxiliary production enterprises, service facilities and factory-wide installations, the replacement of machinery, enlargement of work areas, etc.

Principles Governing Economic Justification of RaM Actions

Statewide methodological guidelines must be followed when proposing RaM actions. Individual actions must aim primarily at:

--resolving labor shortage problems;

--saving materials, and

--saving electric power.

These are the principal criteria governing final selection.

Other criteria to be considered include the time of investment repayment, relative savings achieved in expenditures proper, increase in labor productivity, production increase, etc. The data and indicators required to assess the usefulness of RaM actions must comply with statewide guidelines governing capital construction.

Part of the RaM summary forms an outline prepared by the proponent containing a detailed justification of the principal aims of modernization, a comprehensive evaluation of the economic effect of the RaM action on the VHJ as a whole, justification of foreign exchange requirements, potential liquidation of inefficient manufactures, etc.

Methodological Procedure for Evaluation and Selection of RaM Actions in the Engineering Base

The objective is to evaluate RaM actions according to the data submitted by the VHJ on the basis of objective indicators using computer technology. By agreement with the FMHTS, distinction is made according to the amount of construction expenditures between projects falling into the category not exceeding Kcs 2 million and those exceeding this amount. The overall investment expenditures in both categories are further subject to a limit set by the FMHTS.

The input tabulation contained values taken from the base data of individual VHJ's in the following sequence:

Column No.		IZ three digit numerical symbol for each individual action which means:
1.	First two digits	serial number of VHJ
2.	the second three digits	serial number of action in VHJ
3.	the third number	action category
4.	INC	overall budgetary expenditures (in millions Kcs)
5.	INS	expenditures for machinery (in millions Kcs)
6.	INST	building construction expenditures (in millions Kcs)
7.	QO	production before RaM in VC (wholesale price) (in millions Kcs)
8.	Q1	production after RaM in VC (in millions Kcs)
9.	VNO	expenditures proper before RaM (in millions Kcs)
10.	VN1	expenditures proper after RaM (in millions Kcs)
11.	LO	number of workers before RaM
12.	L1	number of workers after RaM
13.	LV	number of workers from the KNV (kraj national committee)
14.	IZK	one-time import of machinery and equipment from capitalist countries (in millions Kcs o.p.)

15. IZS — one-time import of machinery and equipment from socialist countries (in millions Kcs o.p.)

16. IMK — regular import of raw materials and supplies from capitalist countries (in millions Kcs o.p.)

17. IMS — regular import of raw materials and supplies from socialist countries (in millions Kcs o.p.)

18. EK — export of goods to capitalist countries (in millions of Kcs o.p.)

19. ES — export of goods to socialist countries (in millions Kcs o.p.)

20. OB — number of production sector

These data are printed by the computer in the form of an input tabulation.

An output tabulation was prepared as the basis for the final evaluation and selection of RaM actions in which, in accord with the input data, the computer printed for all proposed actions the values IZ,OB,INC.INS,INST,QO,Q1, LO,LI,LV,IZK,IZS,IMK,IMS,EK,ES and further the following indicators:

1. $DQ=Q1-QO$ — production increase (in millions Kcs)

2. $DVN = VNO \frac{Q1}{QO} - VNI$ — relative saving in expenditures proper (in millions Kcs)

3. $TN = \frac{INC}{DVN}$ — investment repayment time (in years)

4. $\frac{QO}{LO}$ — productivity before RaM (in millions Kcs per worker)

5. $\frac{Q1}{L1}$ — productivity after RaM (in millions Kcs per worker)

6. $\frac{INC}{L1}$ — specific investment expenditures per worker (in millions Kcs per worker)

7. $\frac{DQ}{L1}$ — production increase per worker (in millions Kcs per worker)

8. $\frac{DQ}{INC}$ — investment efficiency (Kcs/Kcs)

9. $DL=L1-10$ — absolute saving in labor

10. $RL=LO \frac{Q1}{QO} - L1$ — relative saving in labor

In the input tabulation individual actions of each VHJ were arranged according to categories and the values INC,INS,INST,QO,Q1,DQ,LO,L1,LV,DL,RL, IZK,IZS,IMK,IMS,EK and ES were summarized according to categories, VHJ's and the entire ministry.

Further, a partial separate summarization of machine building and metallurgical VHJ's, etc. was carried out. In addition, a tabulation of all RaM actions, arranged according to production sector numbers, was prepared which made it possible to evaluate the fulfillment of the production increase and other indicators in selected sectors.

Organizational Implementation of the Action

The RaM program was prepared by the ministry in compliance with the resolution adopted by the presidium of the government. On order by the FMHTS Kovoprojekta Praha [Metallurgical Design Bureau Prague] prepared for this ministry the calculations comprising the evaluation and selection of RaM actions proposed by individual VHJ's, participated in negotiations with VHJ representatives in selection proceedings and prepared the final set of RaM actions to serve as the basis for consideration by the presidium of the government.

The computer work focused on the processing of VHJ proposals from the viewpoint of quality to provide a basis for the evaluation and selection of actions within the ministry's limits and possibilities on one hand and with regard to the effectiveness and urgency of the solution from the viewpoint of modernization of production sectors and the needs of VHJ's on the other.

This approach represented a certain turn and a transition from quantity to quality on the basis of criteria reflecting objective conditions.

Results of Evaluation of RaM Actions

Altogether, 11 engineering and three metallurgical VHJ's were included in the RaM program of the FMHTS. The base data submitted contained a total of 430 proposals of individual actions. The limiting factor was

--the financial limit set by the FMHTS as part of the means available for SZNR and construction projects not exceeding Kcs 2 million in budgeted expenditures;

--proportion of investments in machinery amounting to no less than 70 percent of overall expenditures.

Table 1. Principal Indicators of Selected RaM Actions

	g) VHJ	Celkový počet navržených akcí (RN) a)	Přijatá akce b) (RN)	%	Nárůst výroby RN celkem (výtěžnost) c) min.		max.	INV stroj. RN celkem d) (%)	Produktivita na prac. (Kčs/1 prac.) e) min.	max.	Doba návratnosti f) min.	max.
1.	Škoda Plzeň	23 659	16 139	70 21	0	0,76	2,7	91,3	0	1,3 (9,8)	0,23	nezáv.
2.	ZPS Brno	11 346	9 294	82 85	0,2	0,85	3,8	97,3	0,4	1,3 (7,8)	3,1	nezáv.
3.	ČKD Dukla	15 270	14 227	96 88	0	1	14,5	97,3	0	1,3 (6)	0,3	nezáv.
4.	ČKD Praha	24 1670	19 1244	79 77	0,14	2,4	8,0	96	0,1	1,2 (5)	1,42	6,3
5.	Čs. vagónky	6 344	1 5,8	16 1,8	—	5,6	—	95,5	—	0,9	—	2,4
6.	Chepos Brno	63 653	55 441,1	85,7 67,8	0	1,65	17,2	96,7	0	4,7 (13,3)	0,4	nezáv.
7.	SIGMA Olomouc	36 1213	24 599,6	66,6 49,4	0	1,6	4,9	94,4	0	2,9	1	nezáv.
8.	IVTAS	18 786	9 410,1	50 51,4	0	1,3	6,3	93,1	0,17	0,75	0,5	nezáv.
9.	ČSVZ Praha	23 188	23 185,6	100 104	0	2,64	33,3	94,4	0	2,23	0,89	nezáv.
10.	ZSE Praha	100 2570	50 829,5	54,1 32,2	0	1,74	12,6	97,8	0	3,53 (19,1)	0,35	nezáv.
11.	ZPA Praha	31 443	23 324,9	101 73,3	−3,4	2,64	70,1	92	0,02	2,1 (6,6)	0,31	nezáv.
12.	Kovohutě	7 659	1 5,1	14,3 0,8	—	0	—	62	0	0	—	nezáv.
13.	Hutní druhovýroba	8 713	5 196,5	62,5 27,6	0,4	1,3	2,2	100	0,17	0,98	0,88	14,5
14.	Hutnictví železa	30 1260	19 463,3	46,7 40,1	0	0,46	5	96,2	0	0,98	0,22	nezáv.

Key:
a. Overall number of proposed actions (RN)
b. Approved actions (RN)
c. Production increase / total RN (output)
d. Investment in machinery / total budgeted expenditures
e. Labor productivity (in Kcs per worker)
f. Investment repayment time
g. Names of VHJ's

The proposed actions were evaluated comprehensively in accordance with the following selected criteria: production increase, relative savings in production expenditures, investment repayment time, increase in labor efficiency, effectiveness of investment, absolute and relative savings in labor, foreign exchange requirements and other criteria.

In view of the number of evaluated actions and criteria, classification and calculations were performed by computer. The first tabulation, consisting of all 430 proposed RaM actions divided among individual VHJ's, was used in the selection process proper. Following evaluation and elimination of about

100 actions which were not of an RaM nature a second tabulation was prepared containing data pertaining to 310 selected actions in addition to the sum of principal indicators for the VHJ as a unit and the entire FMHTS.

Following the evaluation and final discussion with representatives of the FMHTS, KPP and individual VHJ's RaM actions in the SZNR category and the category of building construction projects not exceeding Kcs 2 million RN were selected amounting to Kcs 3,653,000,000 (engineering VHJ's). Thereby the Kcs, 3,654,000,000 FMHTS limit set for RaM actions was fulfilled by 99.97 percent. The selected actions represent 40 percent of the overall RN of all submitted proposals.

A different approach was taken to the RaM program in individual VHJ's, resulting in different degrees of fulfillment of limits. Of engineering VHJ's, for example, the Cs. vagonky [Czechoslovak Freight Car Works] failed to fulfill the minimum limit (with Kcs 5.5 million against the stipulated sum of Kcs 115 million), Skoda Plzen by Kcs 450 million and IVTAS by Kcs 51 million.

The 220 RaM actions in engineering and metallurgical VHJ's included in the limit of the SZNR category and that of building construction projects not exceeding Kcs 2 million RN represent a production increase of Kcs 6,868,000,000 or 34 percent. The production increase amounts to an average income of Kcs 1.61 for every crown invested. Actions with RN exceeding the specified investment limit with an expected production increase of Kcs 2,225,000,000 and profitability of Kcs 1.89 were left for further consideration. The selected RaM actions will increase labor productivity by 37 percent. These technical and economic advantages are being achieved primarily by internal shifts of workers, only in rare instances--especially in Slovakia--absolute increases are planned within the framework of limits allocated by the KNV. In the Seventh Five-Year Plan the overall shift of labor within the RaM framework involves 4,040 workers.

Additional data about the effectiveness of actions were entered individually. Primarily the questions of investment repayment time, relative savings in expenditures and labor and other criteria must be assessed differently in applications on production processes (final production) than in actions involving storage, handling of materials, etc (the nonmanufacturing, other than final production sphere). Also the specific evaluation method calls for the introduction of nominal prices of technology and heavy production technology.

By applying the above-mentioned set of criteria in the evaluation and final selection of RaM actions in building construction projects not exceeding Kcs 2 million RN individual VHJ's of the FMHTS achieved results contained in Table 1.

The table reveals that the program also includes actions whose investment repayment times are unfavorable on first inspection. But these are actions necessary to achieve rationalization of related facilities, specifically of storage facilities and facilities for the handling of materials, the reconstruction of some power resource, etc. Other indicators also must be viewed in a broader context (profitability, labor productivity).

Table 2. Comparison of the number of actions and their RaM investment expenditures in individual work stages (in millions Kcs)--Seventh Five-Year Plan (1981-1985)--SZNR actions not exceeding Kcs 2 million in RN for building construction projects.

a) Poř. č.	1) VHJ	b) I. etapa			c) II. etapa – návrh			d) II. etapa – po projednání			e) Min. limit	f) rozdíl II. etapy – návrh k II. etapě – po projednání				g) Návrhy nad limit			h) Žádost celkem	
		počet akcí	RN celkem	z toho staveb	počet akcí	RN celkem	z toho staveb	počet akcí	RN celkem	z toho staveb		počet akcí	RN celkem	čerpání limitů %	čerpání limitů RN	počet akcí	RN celkem	staveb	RN	z toho staveb
1.	ŠKODA Plzeň	11	214	30	23	650	80	18	130,2	12,06	500	—5	—519	24	—450	—	—	—	140	13
2.	ZES Brno	3	32	12	11	340	40	9	291,2	8	300	—2	—52	113	+34	—	—	—	294	8
3.	ČKD Dukla	11	163	10	25	270	52	10	172,7	15,35	90	—15	—97	190	+77	13	65	18	238	30
4.	ČKD Praha	48	1 310	165	24	1 670	100	11	750,3	7,7	550	—13	—914	137	+206	8	530	18	1 284	23
5.	Čs. vagónky	6	268	62	6	344	102	1	8,8	0,25	115	—6	—336	8	—100	—	—	—	8,8	0,25
6.	Chepos Brno	30	404	44	63	633	50	30	349,4	14,8	350	—24	—303	100	—	13	92	4	442	19
7.	SIGMA Olomouc	20	770	106	36	1 213	270	17	435,35	16,58	210	—10	—778	207	+225	7	164	17	599	34
8.	JVTAS	16	834	375	15	704	201	9	410,17	37,84	441	—6	—300	90	—31	—	—	—	410	38
9.	ČSVZ Praha	12	130	7	22	100	10	11	104,63	4,43	98	—11	—83	107	+6	11	91	6	190	11
10.	ZSE Praha	80	2 276	307	100	2 870	267	47	941,74	14,03	650	—53	—1 908	102	+12	12	160	6	830	20
11.	ZPA Praha	23	417	74	31	443	83	33	323,9	25,7	274	+2	—118	118	+50	—	—	—	324	38
	i) Celkem strojírenství	255	7 504	1 185	364	9 133	1 300	206	3 652,94	146,47	3 654	—150	—5 490	99,9	—1	66	1 107	64	4 760	210
12.	Kovohutě Praha	—	—	—	7	600	104	1	8,1	1,9	—	—6	—594	—	—	—	—	—	8	2
13.	Hutní druhovýroba	—	—	—	8	713	90	3	126	—	—	—5	—587	—	—	2	71	—	197	—
14.	Hutnictví železa	—	—	—	30	1 203	161	10	483,3	18,1	—	—20	—720	—	—	—	—	—	483	90
	j) Celkem hutní	—	—	—	54	2 576	434	23	614,4	20	—	—31	—1 961	—	—	2	71	—	683	20
	k) Celkem FMHTS	255	7 504	1 183	418	11 720	1 734	228	4 267,34	166,47	3 654	—190	—7 401	99,9	—1	66	1 178	64	5 443	230

Key:

a. Serial No.
b. First stage: number of actions; overall RN; of this, building construction projects;
c. Second stage--proposal:
d. Second stage--approved:
e. Minimum limit
f. Difference in second stage: proposed actions--approved actions; number of actions; overall RN; limit drawn in percent and RN
g. Proposals exceeding the limit: number of actions; overall RN; construction projects
h. Overall request: RN; of this construction projects
i. Total for engineering
j. Total for metallurgy
k. Total for FMHTS
l. VHJ, name of enterprise

Table 3. Summary of all RaM actions according to VHJ category SZNR not exceeding the Kcs 2 million budgetary limit for building construction projects

Key:
a. Serial No.
b. Within limit: number of actions; INC, total RN; INS RN for machinery; INST RN for building construction; QO previous production level, DQ production increase
c. In excess of limit: number of actions; INC, total RN; INS RN for machinery; INST RN for building construction; QO previous production; DQ production increase
d. Engineering VHJ
e. Metallurgical VHJ
f. VHJ, names of
g. Total for engineering VHJ's
h. Total for metallurgical VHJ's
i. Total for engineering and metallurgical VHJ's

Table 4. Summary of all RaM actions exceeding Kcs 2 million RN according to VHJ (in millions Kcs)

Key: same as in Table 3.

The number of RaM actions and their investment expenditures for individual work stages of the FMHTS RaM program are summarized in Table 2. The principal budgetary and production indicators of selected actions are summarized in Tables 3 and 4.

The work performed so far indicates that by completing the second work stage of the RaM program in cooperation with VHJ's, a qualitative change in the concept of the entire action and in correlation with the investment plan has occurred and more realistic conditions were created for the implementation of this program. In order to implement the next stage of the RaM objectives it will be necessary:

--To consider the possibility of raising the investment limits of effective actions which exceed the limit so far;

--To tackle the problem of the need for an absolute increase of numbers of workers from KNV labor resources by internal shifts, especially by the elimination of inefficient enterprises;

--To plan for the implementation of adequate technical and design preparation;

--To use specialized technological work resources for the preparation of selected RaM actions in accord with resolution No. 176/1977 of the presidium of the CSSR government;

--To secure the inclusion of the RaM actions in the implementation plan for individual years of the Seventh Five-Year Plan.

The entire material was submitted to the FMHTS as a basis for discussion by the minister's council and for the preparation of a report for discussion by the presidium of the government. The project prepared by Kovoprojekta Prague was approved in these proceedings and recommended for application to conditions of the FMVS. This will provide for the unification of the data base for the preparation of the implementation stage of the RaM program in both engineering sectors.

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CZECHOSLOVAKIA

'COMPLEX EXPERIMENT' IN METALLURGY, HEAVY ENGINEERING EVALUATED

Prague PODNIKOVA ORGANIZACE in Czech No 8, 1978 pp 338-343

[Article by Jaroslav Va/erka, Doctor of Law, deputy minister of metallurgy and heavy engineering of the CSSR: "Complex Experiment of Efficiency and Quality Control in Metallurgy and Heavy Engineering"]

[Text] The directives for economic and social defelopment of the CSSR in 1976-1980, approved by the 15th CPCZ Congress, emphasized the need to develop and further improve the management of the national economy to make it more instrumental in raising efficiency of the development of means for a more thorough application of the scientific and technological progress and socialist economic integration, so that it mobilizes reserves for that purpose and stimulates higher productivity, better quality of production and our working people's creative forces and initiative. That demands most of all that tasks of the plan be further consolidated, that the planning discipline be intensified on every level of management, that economic incentives be utilized more efficiently to fulfill plan tasks, and that the organizational system of the production and technological base be rationalized.

In his report to the 15th CPCZ Congress the premier of the federal government, Comrade Strougal, stressed that to achieve a higher level of management, new and better methods of planning as well as comprehensive material incentives must be more courageously sought, tested and introduced, and that such measures which are in harmony with the objectively compelling trends of the further development must be enforced.

The complex experiment in the control of efficiency and quality, approved by the decision of the Presidium of the CSSR at the end of last year, follows those aims. Therefore, the experiment represents an important step in the area of management of national economy toward implementation of the conclusions of the 15th CPCZ Congress, aimed at the adoption of methods of planning and management corresponding with the challenging character of objective problems we must resolve now if we wish to continue making all our activities more efficient and to insure continuous improvement of our people's standard of living.

The planning of the complex experiment in metallurgy and heavy engineering reaches back to the period of gradual implementation of the conclusions of the third plenary session of the CPCZ Central Committee in September 1976 addressed to the tasks and development of Czechoslovak metallurgy and engineering after the 15th CPCZ Congress. The joint document of the Presidium of the CPCZ Central Committee and of the Presidium of the CSSR government dealing with enforcement of decisions stemming from said meeting has called for vigorous solutions to long-term problems as well as to our current urgent tasks. The orientation toward a high technological and economic level of production, toward an increased export capacity and toward better satisfaction of our domestic market has been consistently linked in this document with a higher level of control activities in the ministries, economic production units and enterprises, and with intensified planning and improved economic tools. Analogically, material and system measures such as greater attractiveness of work, reconstruction and modernization of the production base, elimination of disproportions between capacity potentials of the finishing sectors and their needs must also be combined when resolving internal problems of metallurgy and heavy engineering.

In harmony with these directives issued by the highest party and government organs, numerous measures directed at improving the planned management are being gradually implemented in metallurgy and heavy engineering.

Quality, completeness and promptness of fulfilled deliveries are emphasized especially when raising the responsibility for fulfillment and over-fulfillment of qualitative tasks of the plan. Particular attention is given to deliveries for investment construction and for export investment units: a specific system of negotiations of suppliers' and sub-suppliers' contracts was introduced along with a related system of tasks of the economic plan. An independent cross-sectional plan of the ministry for the achievement of higher supplier functions and their statistical review has been enforced. Moreover, the formally recorded negotiations of supplier-consumer relations also proved successful in mutual contracts between organizations of the two engineering ministries.

In addition to measures adopted for the whole industry to upgrade quality in the industry as a whole, the Federal Ministry of Metallurgy and Heavy Engineering has introduced its own specific measures the purpose of which is to continue the ministry's research in the area of the integrated system of control of quality and reliability in selected types of metallurgical and heavy engineering production; institutes have been established for guidance in the area of control of quality of products in order to introduce a comprehensive system of control of quality of products has been prepared, and formations of quality control are being organizationally completed and their staff consolidated; and the system of the ministry's planning and management of innovations is being improved.

Numerous steps were taken in the system for planning the divisional structure of production, the scientific-technical development, nodal and component specialization, preparation and application of international socialist integration and priority of supplies for the obligatory operations of investment construction. Furthermore, the system of balance was intensified and administrative operations expanded. There was a substantial expansion of the number of engineering entries for which divisional and product balance and distribution plans are being assembled in the economic production units as well as in the ministry. When planning the divisional structure of production and intensifiying the system of balance and application of administrative measures, special attention is given to finishing departments and spare parts.

To achieve the planned employment rate in the required regional distribution and in the required structure of professions, the regulation of jobs in selected organizations of the ministry is being improved in cooperation with other organs; regional balance has been improved and system provisions have been applied so as to obtain skilled young workers and to stimulate the interest in the study in professional and secondary schools and institutes of higher learning. The process of wage differentiation is systematically controlled and wage systems are being improved.

To consolidate planned management further, automatic control systems are gradually being applied and the use of computers is regarded as a tool of control processes along the management axis: ministry-economic production unit-enterprise. Variant assessments of the plan, tests of its comprehensiveness and structures as well as unification of the information along the line of direct management have been emphasized. On the enterprise level and in the management within the enterprises the automatic control system has focused particularly on the technical preparation for production, operational management of production, material and technical supplies, work and wages as well as marketing.

These examples indicate a relatively broad scope of measures which the Federal Ministry of Metallurgy and Heavy Engineering has applied in its sector in order to intensify, improve and increase efficiency of the planned management. As a rule these measures are adopted within the framework of the generally valid principles.

The purpose of the complex experiment of efficiency and quality control applied since 1 January of this year in selected economic production units of some industrial branches is to test some new principles and factors for a possible general application in national economy. Moreover, in metallurgy and heavy engineering it has significantly contributed to fulfillment of the conclusions adopted at the third plenary session of the CPCZ Central Committee, because the targets of this experiment are in harmony with basic directions of the development in metallurgy and heavy engineering.

The effort to use the five-year plan as a basic tool and to link to it basic tasks, relations and tools stipulated for the 5-year period has been of extraordinary importance for metallurgy and heavy engineering.

The shift of the gravity of obligatory tasks into the five-year period may positively affect and increase the stability of production programs; it may result in greater efficiency of the technological development and modernization of the production base; it may raise efficiency of economic tools. From this point of view the function of allowances is of particular significance; annual plans may fluctuate within their framework, and if they are met the annual plans are not approved but metely confirmed. The flexibily interpreted long-term character and stability of the plan demand in particular that the methods determinating the tasks, limits and norms in the five-year plan be improved; they may affect favorably the scope and significance of problems whose solution is concentrated in the annual operational plans only.

The long-term character and stability of the five-year plan is linked with another relevant principle applied in the complex experiment, namely, it is preferable to develop and fulfill a mobilization plan that to surpass a less demanding plan. Furthermore, the factor of the long-term application may favorably affect the scheduled implementation of rationalization programs, because the results already achieved produce higher resources for funds of material incentives.

Consolidation of the position of economic production units is in harmony with the trends of further development of organizational structure of the production and technical base. The ministry has already experimented to some extent with returns to the state budget for economic production units as one entity by extending credit relations between the bank and the general administration of the trust, the structure of wage control for the economic production unit as one entity. This was further expanded in conditions of the experiment by the concentration of noninvestment financial expenditures of science and technology for economic production units and by the creation of a fund for cultural and social needs in trusts according to a regulation valid for syndicates and syndicated enterprises.

The effect of material incentives on increased profitability of production funds--and with exceptional export commitments particularly in heavy engineering also the effect of intensified stimulation on better results in foreign trade--may become evident in the conditions of metallurgy and heavy engineering which make above-average claims on production funds and the efficiency of whose development is affected as a rule by the efficiency in investments.

An integral part of the complex experiment is a more intensive effect of prices and price ceilings on the stimulation of efficient innovation of products and on quality of production. Of particular interest will be the experience gained in the area of planned regulation of the wage

development; the determination of the norms for the basic component of wage funds based on the share in performance itself has introduced into the planned management a new category of values which heretofore has been outside the workers' interest in the administrative axis. The effect of this indicator on development of the wage volume will be relatively highly intensive and should create considerable interest in the reduction of material consumption and in the growth of profitable production. Also, conversion factors for determining the real volume of basic wages according to overfulfillment or non-fulfillment of the planned volume of output itself diverge distinctly from the hitherto practice; they may affect favorably the adoption of the mobilization plan as well as implementation of outher intensifying measures in the course of fulfillment of the plan.

These examples of new elements in the planned management which are applied in the complex experiment and which have far from exhausted all the new and relevant principles demonstrate that a positive effect of the tested principles will be of enormous importance to intensive and efficient development of metallurgical plants and heavy engineering.

In agreement with this information, operations connected with application and management of the experiment were introduced in the ministry with utmost responsibility in unusually short time.

First of all, the economic production units within the Federal Ministry of Metallurgy and Heavy Engineering in which the experiment is now underway have been very carefully selected. We proceeded from the fact that this did not concern merely a command of new conditions but also that the experimenting economic production units must gradually serve as an example of modern efficient forms of management in every area. Sigma, a trust of enterprises in Olomouc, and Secondary Metallurgical Production, a trust of enterprises in Prague, were chosen by the administration of the ministry as the economic production units where the experiment will take place. Several points of view and factors were considered in the selection. First of all, it was necessary to make sure that the experiment affects the technological production base in metallurgy as well as heavy engineering. At the same time, the transition to a syndicated type of management is scheduled for the Sigma economic production unit for the near future, while in the Secondary Metallurgical Production economic production unit such transition is not anticipated for the near future. This will facilitate tests of new factors in conditions of a syndicate as well as in conditions of the trust type of economic production unit. Their hitherto successful fulfillment of the tasks of the Sixth Five-Year Plan was an important factor. Both economic production units successfully fulfilled and surpassed their planned tasks for the first 2 years of the Sixth Five-Year Plan and earned foremost ratings in a comprehensive evaluation of the results achieved. Progressive modern forms of management have already been traditionally applied in both economic production units and thus, also the preconditions in terms of their personnel have been met for

dealing with tasks connected with implementation of the experiment. From the viewpoint of the production program the orders for most products in both economic production units have exceeded current production and delivery plans, and thus it is in the interest of our society to stimulate the most dynamic development possible, and, if the results are positive, to expand the resources for the development of their production capacities as well as the resources to make jobs in the enterprises of both economic production units more attractive.

Objectively it must be said that the above-mentioned selection also has its drawbacks, such as the material interest of the experimenting economic production units in increasing export which is based on the system of personal and enterprise-wide incentive. While the needs of our domestic markets are not satisfied, this interest may be practically reflected merely in increased profitability of export and not in the increase of the export volume above the plan.

While planning the experiment the ministry followed the main objective of methodical assurance for planning of the experiment in the ministry, in the economic production units and in enterprises. The operations of the Governmental Committee for Questions of Planned National Economic Management, general regulations approved by the decision of the Presidium and detailed instructions of the participating central organs were of considerable help. Thus, the ministry was able to limit its supplementary directives to specific instructions for the departments, for instance, on labor and wages and a detailed working schedule. Activs and seminars in which leading workers of enterprises and party and departmental officials participated were organized in both economic production units.

In the application of the experiment the main task of the ministry was the specification of tasks, limits and norms for the plan for 1978-1980, as stipulated by the regulations for the complex experiment. The significance of those operations is evident from the application of the principle of long-term validity, according to which specified tasks, limits and norms may be changed by central organs as a rule only within the framework of the stipulated allowances. Meanwhile, the higherto method of planning has not applied some tasks and limits which had to be newly defined for needs of the experiment, such as the quota of top-grade products, the quota of new products in the total production volume and the quota of products with a high technical-economic standard, i.e., top-grade products and technologically advanced products. Another system of tasks and limits has been derived from indicators still in general use; however, it must be computed and modified.

The specification of the 1978 plan, directives for the draft of the proposal for the 1979 plan and for the 1980 plan based on the plan for the Sixth Five-Year Plan were at the disposal of the sectors for specification. However, appropriate tasks, limits and indicators had to be retested in connection with five-year plan deviations from implementation of the annual plan, most of all in terms of a higher

rate of production dynamism and sale of products for the satisfaction of urgent national economic needs. The required quantifications were processed in several variants, whereby the principle was stipulated that the general administration of the experimenting economic production units on the one hand and appropriate central organs, particularly the state planning commission, federal finance ministry, federal ministry of labor and social affairs, and the federal ministry for technological and investment development on the other hand would closely cooperate. Collective discussions of these problems in the administrative commission of the ministry proved effective; all the participating organs reached there an agreement on the decisive part of the specification. The final conference of the minister's advisory board which dealt with the proposal for the specification could then focus on a very limited group of problems which had not been fully resolved in the administrative commission of the ministry and particularly on the test of readiness of both economic production units for implementation of the complex experiemnt. It may be said that terms and rules of the complex experiment and the stipulated contents of the specification have been met successfully.

Whether in the area of methodical preparation and determination of regulations or in the numerical specification of tasks, limits and norms, the quality of the completed works may not be evaluated before implementation, analysis and assessment of the results achieved.

The specification of the plan for 1978 through 1980 for the experimenting economic production units in metallurgy and heavy engineering proceeds consistently from general regulations approved by a decision of the Presidium of the CSSR.

It contains tasks, limits and norms set progressively for individual years of this 3-year period with the following important new factors:

In the production and marketing plan the total volume indicators of production--gross value of the production and the production of goods--are not a part of the specification. Volumes of production have been discussed only with the experimenting economic production units in the ministry's administrative commissions, because some specified tasks and limits were determined on the basis of production volumes. In this part of the plan the basic obligatory task is the total volume of the so-called final sales, i.e., the sum of deliveries for export, for domestic market and for investments in wholesale prices. For compilation of the annual plan the specification makes positive allowances of 2 to 3 percent. The volume of deliveries for export to capitalist countries in wholesale prices, and the volume of machinery and equipment delivered for construction exceeding Kcs 2 million of the budget costs were determined as special items in this total delivery task.

Volumes of export in foreign prices are not specified; the efficiency of export is determined by the lowest values of the differential indicator, i.e., the ratio of foreign prices (FCO) to wholesale prices.

These values are set without allowances; it is expected that they will be further specified in annual plans according to the development of

contractual prices; moreover, tasks concerning deliveries for export to the socialist countries as well as obligatory production and delivery tasks of the centrally balanced items and development programs will be complemented in annual plans.

It has been said before that in both of the experimenting economic production units the essential part of the production program consists of the finishing sectors of production, where the needs of the consumers--manufacturers of machinery and equipment and suppliers of investment units--have not been fully covered and supplementary import which is frequently inefficient must be used. Therefore, social interest is focused most of all on gradual reduction of such inequalities rather than on increased deliveries for direct export. Experiences gained from experimental assessment of the new factors of control under these conditions will be a valuable contribution to its possible general application.

In the area of the plan for production and sales a new factor appears in the determination of quotas of new products in the total volume of production, furthermore, of the quota of top-quality products in the volume of the assessed products, and of the quota of products of a high technical and economic standard in the volume of new products. For instance, the quota of new products in the total volume of production in the Sigma economic production unit was determined at the average amount of 15 percent, with slight interannual progression, and in the Secondary Metallurgical Production economic production unit the quota of products of high technical and economic standard in the volume of new products was set at 15 percent for 1978, 30 percent for 1979 and 47 percent for 1980.

Fulfillment of the planned structure of deliveries is one of the conditions for creation of the development fund and, in the designated scope, also for the volume of the incentive wage component. There is a marked material interest in increase of the volume and efficiency of, export by means of the newly established fund which may be used to increase the resources for cultural and social needs, rewards and limited investments. According to calculations made during the specifications, if the planned preconditions are met this incentive will amount to Kcs 6 to 7 million annually in the Secondary Metallurgical Production economic production unit and to Kcs 22 to 32 million annually in the Sigma economic production unit.

The work schedule contains newly drafted methods of determining the volume of wage means. The basic component which includes basic wages was determined by a norm as a ratio of these wages to the output proper. In agreement with the planned rate of productivity of work and profitability of production, these ratios display a declining tendency in individual years from 1978 to 1980, namely, in the Sigma economic production unit from 29.2 percent in 1978 to 25.01 percent in 1980, and in the Secondary Metallurgical Production economic production unit from 26.56 percent in

1978 to 24.81 percent in 1980. In comparison with the hitherto-applied quota of wage costs in receipts, this norm is characterized by roughly twice the intensity of the incentives. The amount of the norm for the 3-year period remains unchanged--with an allowance of minus 0.2 to 0.4 percent. Another component of the planned wage volume is the incentive component corresponding to the planned volume of premiums, rewards and share of economic results. It was determined for individual years as an absolute sum, and in comparison with the hitherto fund of rewards it appears conspicuously higher, since it contains all the premiums. Moreover, for the 3-year period interannual workers' incentives with allowance of minus 0.2 to 0.3 percent were assigned as obligation.

In the plan of investment construction a new category of the so-called limited investments has been introduced for construction up to Kcs 2 million of the budget costs and for machinery not included in the construction budget; the extent of limited investments was set indirectly by the norms and regulations for creation of the development fund. The norm for average allocation from profits for this fund amounts to approximately 10 percent, with a declining tendency according to the planned increase in profitability and creation of profits in individual years. The norm for the quota of limited investments financed from depreciation fluctuates in individual years from 12 percent to 21 percent. Both norms are defined for a long period with minus 0.5 to 1 percent allowance. These norms are supplemented with guaranteed subsidies allocated from the ministry's centralized assets and with the share of limit investments determined for guidance; the limit investments are financed by a credit amounting to 30 percent.

Marked changes in financial management of the experimenting economic production units appeared in the modified structure of the obligatory and guiding indicators of the financial plan.

Among the obligatory indicators of this plan, in addition to the norms for the creation of funds, profitability of production funds which is extremely important is specified progressively for the Secondary Metallurgical Production economic production unit from 8.86 percent to 10.46 percent and for the Sigma economic production unit from 9.02 percent to 13.37 percent for individual years from 1978 through 1980. The development of these indicators determines the means of the incentive complement of wages and the part allocated from profits for the development fund.

In the selection of indicators and in material stimulation new factors of planned management stem specifically from these examples of specification of the plan for the experimenting economic production units.

After completion of the specification for the plan for 1978 through 1980 and definition of conditions for the experiment, the center of gravity for the activity of the ministry has been shifted to continuous evaluation of the hitherto results. Conditions have been created at the Federal Ministry of Metallurgy and Heavy Engineering for systematic control of the activity of the experimenting economic production units and for efficient assistance during the period of testing efficiency and quality control.

Organizational provisions for implementation of the experiment cover also the study and evaluation of its progress. Experts appointed from appropriate professional sectors are in constant touch with the economic production units, and in some instances even with enterprises; a working group has been organized by the minister's provision for the purpose of resolving methodical problems; the ministry's administrative group on the level of deputy ministers and departmental directors has the decisive authority. The tasks related to the evaluation of the experiment in enterprises and economic production units are exceptionally important and relevant. A comprehensive analysis of economic results in itself is extremely challenging if its purpose is to present an objective assessment of the positive and negative trends and developments. Furthermore, the effect of individual tools of control must be analyzed in the economic experiment.

The results of the experiment are determined at present primarily in the economic production units and enterprises. Since the fourth quarter of 1977 the general administration of the Sigma economic production unit in Olomouc and the Secondary Metallurgical Production have been intensively engaged in its planning and application. Managing and working organs were organized under the leadership of general and professional directors; they are focusing on planning in detail the system of management, on the one hand, and on informing in depth the leading economists and political and professional workers in the enterprises concerning principles and targets of the experiment and on discussing main problems in collectives, on the other hand.

The first direction of operations resulted in appropriate organizational and methodical measures along the managing axis, in the specification of the 1978-1980 plan for enterprises in experiment conditions, and in the compilation and presentative of the comprehensive plan; it continues particularly in the intensified and improved activity of general administrations as a result of general objectives and needs of the experiment. For instance, increased efficiency in the managment of technical development, intensification of the systematic approach to the solution of problems, greater differentiation in the method of rewards on the basis of uniform fulfillment of tasks, and with a shift of the center of gravity to indicators of quality are planned in the Secondary Metallurgical Production economic production unit; a new rating system for the socialist competition of the economic production unit enterprises has been developed.

The Sigma general administration is intensifying and increasing the efficiency of management in agreement with the objectives of the experiment, while transition to the syndicated form of the economic production unit organization is underway at the same time.

It is an exceptionally challenging task in terms of work to combine both tasks within the same period; however, it is in agreement with the conception of the position of economic production units under the conditions of the experiment.

Activs and seminars as well as coordinating conferences of the chairmen of party organs, with the participation of the leading representatives of the Government Committee for Questions of Planned Management, the ministry, higher party organs and trade unions, provided information about the adopted measures and assessed them collectively in both experimenting economic production units.

In conclusion it may be said that the appointed program of operations connected with application of the complex experiment for control of efficiency and quality in metallurgy and heavy engineering has been launched thanks to political preparation and the initiative approach of all participating organizations. The chosen path must continue consistently in every direction. Its success will be determined primarily by the workers' initiative approach to a higher technological standard, quality and economic production and their adoption and implementation of challenging tasks in the technical and economic development of the experimenting organizations.

PHOTO CAPTIONS [photos not reproduced]

1. p 340. MEZ national enterprise in Mohelnice--Processing of bundles. Photograph by B. Macak.

2. p 341. MEZ national enterprise in Mohelnice--Pressing shop of stator and rotor plates and small parts. Photograph by B. Macak.

3. p 343. MEZ national enterprise in Mohelnice--Shipping of finished electric motors. Photograph by B. Macak.

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